DOCUMENT RESUME

ED 457 497 CG 031 280

AUTHOR Lang, Michelle A.
TITLE Sexual Behavior, Risk Beliefs, and Assertiveness among Adolescents.
PUB DATE 2001-08-00
NOTE 21p.; Paper presented at the Annual Conference of the American Psychological Association (109th, San Francisco, CA, August 24-28, 2001).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Acquired Immune Deficiency Syndrome; Adolescents; *At Risk Persons; Attitude Measures; Contraception; High School Students; High Schools; Safe Sex; Sex Differences; Sexuality; Social Cognition
IDENTIFIERS *Sexual Relationships

ABSTRACT

HIV risk behaviors were examined with 457 adolescents, ages 12 to 19, from four environments (community, high school, and two youth conferences). Over half reported being sexually experienced, with an average age of 13.6 for willingly engaging in first sexual intercourse. Boys reported engaging in intercourse at a significantly younger age than girls, had significantly more sex partners than girls had in the previous year, and had significantly more sex partners in their lifetimes than girls. Of the sexually experienced subgroup, 92% reported engaging in unsafe sex behaviors in the previous year, with 75% of reported sexual behaviors being unprotected. Analysis investigating predictors of perceived HIV risk found that sexually experienced girls who had a greater number of sex partners in the previous year; who had a higher level of sexual assertiveness; who used alcohol in the past years; and who were older when they first had intercourse, were more likely to perceive themselves to be at risk for HIV. For sexually experienced boys, only a higher level of perceived peer risk for HIV was associated with a higher likelihood of perceiving oneself at risk for HIV. Examination of potential predictors for high sexual assertiveness rendered weak predictive models for both genders. (Contains 34 references.) (Author/JDM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 457 497

Sexual Behavior, Risk Beliefs, and Assertiveness Among Adolescents

Michelle A. Lang, Ph.D.
University of Rhode Island

Sexual Negotiations:
Gender and Sexual Assertiveness in Youth

109th Annual Convention of the
American Psychological Association
San Francisco, California
August 24-28th

BEST COPY AVAILABLE

Michelle A. Lang, Ph.D., now at Mount Sinai School of Medicine of New York University, Department Psychiatry, Box 1230, Division of Health Services Research, One Gustave L. Levy Place, New York, NY 10029, michelle.lang@mssm.edu

CG031280

M Lang

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Abstract

HIV risk behaviors were examined with 457 adolescents aged 12 to 19 (M=15.3, SD=1.4 years) from 4 environments: community, high school, and two youth conferences. Over half (59%) reported being sexually experienced, with an average age of 13.6 for willingly engaging in first sexual intercourse. Examination of the 268 sexually experienced youth found boys reported first (willingly) engaging in intercourse at a significantly younger age than girls (M=12.8, SD=1.8 years versus M=14.3, SD=1.6 years, respectively). Boys reported having had significantly more sex partners than girls had had in the previous year (M=2.7, SD=2.4 versus M=1.8, SD=1.5, respectively), and having had significantly more sex partners in their lifetimes than girls (M=4.2, SD=3.0 versus M=2.8, SD=2.3, respectively). Of the sexually experienced subgroup, 92% reported engaging in unsafe sex behaviors in the previous year, with three-quarters (75%) of reported sexual behaviors being unprotected. Logistic regression analyses investigating predictors of perceived HIV risk found that sexually experienced girls who had had a greater number of sex partners in the previous year, who had a higher level of sexual assertiveness for partner communication, who used alcohol in the past year, and who were older when they first had sexual intercourse (willingly), were more likely to perceive themselves to be at risk for HIV. For sexually experienced boys, only a higher level of perceived peer risk for HIV was associated with a higher likelihood of perceiving oneself at risk for HIV. Examination of potential predictors for high sexual assertiveness rendered weak predictive models for both genders. Qualitative focus group data are discussed to gain further insight into quantitative findings.

Sexual Behavior, Risk Beliefs, and Assertiveness Among Adolescents

Introduction

HIV is the sixth leading cause of death among youth aged 15-24 in the U.S. (Centers for Disease Control and Prevention [CDC], 1998). It is estimated that at least half of all new HIV infections in the U.S. are among people under the age of 25, and the majority of these young people were infected by engaging in unprotected sex (CDC, 2000). Further, the CDC reports that although AIDS incidence is declining, there has not been a comparable decline in the number of newly diagnosed HIV cases among youth. Risk behaviors such as early age of sexual activity onset, inadequate or no protective measures during sex, multiple sex partners and substance use, together with susceptibility to negative peer pressures, impulsivity and a sense of invulnerability place youth at increased risk of HIV infection. Adolescents are more likely than are adults to engage in behaviors associated with health risks and they tend to have a higher sense of invulnerability and immortality (e.g., Gruber & Chambers, 1987; Irwin & Millstein, 1986). This study examined sexual behavior, risk beliefs, and assertiveness to protect themselves against HIV infection among 4 samples of youth.

Method

Participants

During a 2-year period in 1993 and 1994, youth between ages of 12 and 19 from 4 different samples were asked to complete a health survey, assessing knowledge, attitudes, behavioral risk factors, and perceived risk for HIV/AIDS. A "Community Sample" was derived from adolescents in the New England area in early 1993, a "School Sample" was obtained from a middle class, rural area junior/senior high school in Connecticut in late 1994, and two "Conference Samples" were acquired from teens attending a national youth conference in Rhode Island during mid-year in 1993 and 1994. The Conference Samples represented youth from states in the eastern U.S., as well as from Bermuda, Jamaica, and the Cayman Islands. The youth conference – funded by various community facilities, schools, youth groups and privately by parents – emphasized peer leadership, drug education, personal growth and health life skills during a 3-day period.

Measures

Dependent variables. Adolescents rated their current risk for HIV on a 5-point scale ranging from no risk to high risk. For this study, the range was collapsed into a dichotomous variable consisting of perception of "no risk" or some level of risk for HIV. Also, a dichotomous measure of sexual assertiveness was computed using the assertiveness subscales described in more detail below. Adolescents with a combined assertiveness score in the top quartile range (3.76 to 5.0) were categorized as youth with high assertiveness, while the remaining youth were categorized in the low assertiveness group.[1]

[1] Adolescents in the high assertiveness group responded to inquiries on average with "usually" or "always," while youth in the low assertiveness group responded on average with "never," "sometimes," or "about half the time."

Demographic covariates. Age, gender and ethnicity were examined for their relationship with perceived risk and sexual assertiveness.

Sexual behavior predictors. Six variables regarding sexual behavior were used as predictors of adolescents' perception of their HIV risk. These included: frequency of sexual behaviors (vaginal, oral, and anal sex) across partners during the previous year; proportion of behaviors (vaginal, oral, and anal sex) in the previous year that were unprotected; age of first intercourse (willingly); number of different sex partners in lifetime and during the previous year; and length of current relationship on a 5-point scale (0=no relationship, 1=less than one month, 2=1 to 6 months, 3=6 to 12 months, and 4=over 12 months).

Efficacy for protective behaviors. Three area composite scores were used as predictors assessing adolescents' efficacy for protective behaviors. Ten items from the Sexual Assertiveness Scale (SAS) (Quina, Harlow, Gibson, & Morokoff, 1990) were used to measure 2 areas: sexual assertiveness regarding condom use and sexual assertiveness with partner communication particularly regarding HIV risk. Internal consistencies for SAS subscales have been reportedly high (alpha ranging from .80 to .90), with evidence of test-retest reliability (Morokoff, et al., 1997; Quina, et al., 1999). In this study, internal consistency was also high (alpha= .87 for condom use assertiveness, and alpha= .93 for partner communication). Subscale scores were converted to a 5-point scale reflecting the answer choice range (1=low to 5=high assertiveness). Seven items adapted from a previous study (Prochaska, Harlow & The Behavior Change Institute, 1990) measured situational condom use efficacy. Teenagers responded to how sure they were on a 5-point scale (1=not at all sure to 5=very sure) that they would use a condom in various situations (e.g., when partner might get angry about using a condom; when depressed; when using alcohol or other drugs). In this study, internal consistency was high (alpha= .93), which corresponded to another study using this measure with older teens (alpha= .88) (Burkholder, Harlow & Washkwich, 1999). Scale scores were converted to a 5-point scale (1=low to 5=high efficacy).

Drug use behaviors. Drug use predictor variables included single indicator (yes/no) items to examine whether youth used alcohol, marijuana, or "other drugs"[2] (without a doctor's orders) during the previous year. Consequences of alcohol and/or drug use were measured with 16 items adapted from an early version of a measure developed for a multi-site research endeavor (Miller, Tonigan & Longabaugh, 1995). Youth responded on a 5-point frequency scale to inquiries such as: "because of my alcohol or drug use, I..." "...got into an argument or fight," "...was in trouble with police or other authority..." "...got sick or threw up." In this study, internal consistency was high for the substance use consequences measure (alpha= .90). Score range for consequences of ranged from 0 to 136 consequences that occurred during the previous year.

Knowledge measures. Knowledge of HIV/AIDS was assessed with items adapted from previous studies with youth ages 14 to 18 (DiClemente, Boyer, & Morales, 1988; DiClemente, Zorn & Temoshok, 1986) and ages 11 to 16 (Siegel, Larazus, Krashovsky, Durbin, & Chesney, 1991), and items measuring perceived knowledge adapted from Catania,

[2] A descriptive list was provided that included amphetamines, cocaine, hallucinogens, inhalants, opiates, sedatives-hypnotics, and "other."

et al. (1989). Principal components analysis identified 3 constructs with 15 strong items (all with loadings >.40). Three items measured perceived knowledge that pertained to prevention and transmission. Six items measured general HIV/AIDS knowledge (e.g., AIDS is caused by a virus, using condoms can lower the risk of getting HIV/AIDS), and six items measured misconceptions (e.g., a new vaccine has been developed to prevents HIV/AIDS, mosquitoes can transmit HIV/AIDS). Internal reliability for subscales was adequate to high (alpha= .75, .85, and .83, respectively). Subscale scores were converted to a 5-point scale reflecting answer selections (1=definitely not true, to 5=definitely true), with lower scores reflecting low knowledge or misconceptions, and high scores showing higher level of knowledge or misconceptions.

Proximity measure. Estimates of perceived peer risk was utilized as potential predictor variable. Eight items adapted from Burkholder (1994) measured perceived peer risk inquiring about sexual behavior and condom norms (e.g., Most of my friends have had sex, my close friends use condoms). Adequate internal reliability was found with this measure (alpha= .70). The measure utilized a 5-point scale (1=definitely not true, to 5=definitely true), with subscale conversion to 5-points with low scores delineating minimal peer risk, and high scores revealing high levels of peer risk.

Qualitative measures. Adolescents in the School and Conference Samples acquired in 1994 were invited to participate in semi-structured, 90-minute focus groups covering a variety of topics regarding HIV/AIDS following questionnaire completion. Topics included: (1) feedback on the questionnaire; (2) the scope of the AIDS pandemic, with adolescents' perceptions of age groups, geographical locations and populations afflicted, including misconceptions about HIV/AIDS; (3) societal dilemmas (insurance issues, segregation, and pregnancy); and (4) perceptions of risk and risky behaviors pertaining to teenagers such as specific situations, resources for information, and assertiveness. Focus groups were lead by the author and a trained research assistant. Questions were answered and misconceptions were corrected at the end of each focus group in order to allow other participants an opportunity to respond to their peers, and for group leaders to gauge pervasiveness of misconceptions. Comments from transcripts were categorized and tallied by topic and response across all focus groups sessions.

Design and Procedure

Community sample. For the Community Sample, parents of potential participants were located from various community centers, college settings, and metropolitan business locations during 1993. Informational packets were mailed to 250 parents describing the study that contained informational contacts, parental consent forms, and questionnaire packets to be forwarded to the adolescent. Postage-paid, addressed envelopes were provided to parents and potential participants. No identifiable information was obtained on questionnaires, as consent and assent forms, and questionnaires were returned under separate cover. Youth aged 18 or 19 provided consent for participation rather than assent.

School sample. Nearly 1000 adolescents (N=956) from the School Sample were invited to participate in the study, whereby parents were informed with informational packets. Students delivered parental consent to the school that contained phone numbers for

verification. Youth ages 18 or 19, provided consent. School Sample youth completed the questionnaire during specified school hours and deposited it in a designated area. No identifiable information was obtained on questionnaires. Students in the School Sample were invited to participate in one of 22 focus groups that were held at the school in the fall of 1994.

Conference samples. Exact attendance rates were unavailable for Conference Samples, but approximated 300 attendees during each year of 1993 and 1994. Parents were provided with informational packets with conference registration materials. Conference Sample youth with parental consent (or personal consent if 18 or older) completed the questionnaire during designated times during the 3-day conference, and invited to participate in one of 6 focus groups held during the conference.

Analyses

Analyses were conducted with the Statistical Package for the Social Sciences (SPSS) version 9.0.1 for Windows (SPSS Inc., 1999). All potential predictor variables were subjected to univariate analyses (independent samples t-tests and chi-square statistics), comparing group differences between sexually active adolescents' risk perceptions (no risk versus some level of risk), and separate analyses comparing group differences on high and low sexual assertiveness. Separate profiles were examined by gender. Variables identified as having an alpha $\leq .25$ in univariate analyses were considered potential predictors of adolescents' risk perceptions or sexual assertiveness and included in multivariate logistic regression (Hosmer & Lemeshow, 1989, p. 86). Predictor variables were subjected to logistic regression using stepwise backward likelihood ratio elimination. Gender differences on potential predictor variables were examined with general linear model multivariate analysis of variance (MANOVA) with Bonferroni adjustment for multiple post hoc comparisons to control for Type I error. Transcripts of focus group discussions were utilized to supplement quantitative findings, where response frequencies were tallied and categorized.

Results

Quantitative Findings

Data were acquired from 457 youth between ages of 12 and 19 (M=15.3, SD=1.4 years) with approximately equal numbers from each sample. The overall response rate was 25% (N = 457/1806). Minimal significant differences were noted with demographic, behaviors and scores on measures between the four samples, thus data were combined. The majority of the combined sample was comprised of girls (63%), and most of the youth were of Caucasian descent (81%). More than half of the sample reported being sexually active (59%), with the average age of the sexually active subsample being 15.6 years (SD=1.8, no gender differential). Boys were significantly more likely to report sexual activity ($\chi^2(1,N=457)=26.7$, $p<.001$), than girls, (N=126/170, 74% versus N=142/287, 50%, respectively). Additionally, boys reported first (willingly) engaging in intercourse at a significantly younger age than girls ($t(266)=7.4$, $p<.001$, M=12.8, SD=1.8 years versus M=14.3, SD=1.6 years, respectively). Similarly, boys reported having had significantly more sex partners than girls had had in the previous year ($t(266)=3.6$, $p<.001$, M=2.7, SD=2.4 versus M=1.8, SD=1.5, respectively), and significantly more sex partners in their lifetimes ($t(266)=4.4$, $p<.001$, M=4.2, SD=3.0 versus

M=2.8, SD=2.3, respectively). Of the sexually experienced subgroup, 92% (N=247/268) reported engaging in unsafe sex behaviors in the previous year, with three-quarters (75%) of reported sexual behaviors (vaginal, oral, and/or anal) being unprotected.

More than one-third (34%) of the sexually active youth perceived themselves to be at no risk for HIV (N=92/268), which included 31% (N=84/268) of youth reportedly engaging in unsafe sex behaviors in the previous year. Logistic regression analysis was utilized to examine potential predictors of sexually active adolescents' perceived risk for HIV, as well as potential predictors related to sexual assertiveness. Table 1 depicts potential predictors utilized for separate regression analyses by gender, as well as gender differences among these predictors. Generally, knowledge measures for HIV/AIDS were high, and were dropped as potential predictors in preliminary analyses.

Insert Table 1 here

As shown in Table 1, sexually active boys reported significantly higher levels of sexual assertiveness for both condom use and partner communication than that reported by female counterparts (condom use assertiveness: M=3.7, SD=1.0 versus M=3.2, SD=1.1, respectively; and communication assertiveness: M=4.0, SD=1.0 versus M=3.1, SD=1.2, respectively). Sexually active boys were also significantly more likely to use alcohol during the previous year than sexually active girls (92% versus 76%, respectively). Similarly, boys reported experiencing significantly more alcohol- or drug-related consequences during the previous year than girls (M=16.9, SD=15.7 versus M=9.8, SD=13.3, respectively).

For sexually active girls, the logistic regression was significant ($\chi^2(3,N=142)=29.0$, $p<.001$), Nagelkerke $R^2 = .25$), with four predictors remaining in the final step. As shown in Table 2, girls who had a higher number of sex partners in the previous year were more likely to perceive themselves to be at risk for HIV (OR=1.67), than girls with fewer sex partners. Contrary to what might be expected, girls having a higher level of sexual assertiveness for partner communication were more likely to perceive themselves to be at risk for HIV (OR=1.47) than those with lower assertiveness skills in this area. Sexually active girls who reported using alcohol in the previous year were nearly 5 times more likely to perceive themselves at risk for HIV (OR=4.78), than counterparts not using alcohol. Also, sexually active girls who reported a younger age of (willingly) engaging in sexual intercourse were more likely to consider themselves at risk for HIV (OR=0.65), than those with sexual debut at an older age. Predictive accuracy for these four predictors was 82% for perceiving some level of risk for HIV, but only 46% for perceived "no risk". Overall predictive accuracy was 69%.

Insert Table 2 here

For sexually active boys, the logistic regression was significant ($\chi^2(1,N=126)=5.0$, $p<.05$), Nagelkerke $R^2 = .05$), with only one predictor remaining in the final step. For boys, only peer risk was associated with perceived risk for HIV. Sexually active boys who perceived

their peers to be at a higher risk for HIV, were more likely to perceive themselves at risk for HIV (OR=2.00), than counterparts who perceived their peers to be at a lower risk for HIV (see Table 2). Predictive accuracy for this one predictor was 97% for perceiving some level of risk for HIV, but a meager 13% for perceived "no risk". Overall predictive accuracy was 70%.

Logistic regression analyses examining predictors for high assertiveness was significant for sexually active girls ($\chi^2(3,N=142)=38.9$, $p<.001$), Nagelkerke $R^2 = .35$), with 3 predictors remaining in the final step (see Table 3). Sexually active girls who reported high levels of efficacy for condom use were more likely than girls with lower levels to have high sexual assertiveness (OR=2.31). Girls with low levels of AIDS misconceptions were more likely to have high sexual assertiveness (OR=0.55) than those with high misconceptions. Also, sexually active girls who were older when they first (willingly) engaged in sexual intercourse were more likely to have high sexual assertiveness (OR=1.48), than those engaging in intercourse at younger ages. Predictive accuracy for these 3 predictors was meager (48%) for predicting high sexual assertiveness, but higher for predicting low sexual assertiveness (89%). Overall predictive accuracy was 77%.

Insert Table 3 here

For sexually active boys, logistic regression seeking predictors for high sexual assertiveness was significant ($\chi^2(1,N=126)=13.2$, $p<.001$), Nagelkerke $R^2 = .13$), again with only one predictor remaining in the final step (see Table 3). For boys, only efficacy for condom use remained in the equation. Sexually active boys with high efficacy for condom use were more likely to have high sexual assertiveness (OR=1.86) than boys with lower efficacy. Predictive accuracy for the single predictor was 69% for predicting high sexual assertiveness, and 69% for predicting low sexual assertiveness. Overall predictive accuracy was 69%.

Qualitative Findings

All participants had opportunity to provide anonymous feedback regarding the questionnaire in a comments section. Of the comments made regarding the questionnaire, all but one stated they were honest with responses, and the majority felt that truthful disclosure was due to anonymity. A total of 67 adolescents from the 1994 Conference (N=9) and School (N=58) Samples participated in at least one of 28 focus groups held during that year (56 girls and 11 males, age range: 13 to 18; $M=14.2$, $SD=1.1$). For the purposes of this study, only responses related to risk perception, sexual assertiveness and related topics were tallied from transcripts.

The most common reference mentioned by 63% of the focus group participants was the association between popularity and sexual activity. Nearly half (47%) stated they would have sex with a popular person. Popularity seemed to be especially desirable to younger junior high youth, whereby they believed that having sex with a popular individual would make them popular. One girl stated, "...everyone listens and looks up to popular people..., they are persuasive and believable, and everyone wants to be just like them." However, the importance of sexual activity with popular individuals appeared to diminish with age, with fear

of gaining a negative reputation among senior high young women. One older female attributed the attraction to popularity among younger peers as "a need to feel wanted." The second most common reference discussed by 57% of group participants was the pervasiveness of peer pressures to engage in sexual activity, while 30% mentioned pressures from peers to use alcohol or other drugs.

Adolescents responded to scenarios involving friends, sex partners, alcohol and other drugs that inquired about risk, while "risk" remained undefined. The most common "risk" associated with using alcohol or other drugs and engaging in sexual activity, was "getting caught" by parents or police that was mentioned by 52% of group participants, followed by pregnancy (28%), STDs (other than HIV) (12%), and HIV (10%).

Nearly all of the younger teens spoke confidently of possessing sexual assertiveness skills, particularly regarding refusal skills to avoid pressures to engage in unwanted sexual activity or using drugs in a variety of situations. However, 3 older girls contradicted the younger teens, claiming it was more difficult to do than to say, "...you think you'd be able to say something, but when you're in the situation, you can't," "...it just wouldn't work, when you're in that situation, you just don't think." A few young girls added that they were sure men would lie about HIV status in order to have sex, and concluded that communication was pointless. Other girls (10%) attributed a lack of self-esteem to poor assertiveness skills, while 9% of the group mentioned having fears with purchasing condoms in a store given their young age. Many (41%) felt that if condoms were readily available (e.g., in school bathrooms), teens would use them more frequently.

All the participants wanted to hear facts about sex and STDs from parents and/or teachers, and none believed that talking about sex would promote sexual activity. Most reported that information about HIV in the educational setting was not received until "it was too late," typically in high school, and sensitive topic discussions with parents were rare. Further, information from parents and teachers typically promoted only abstinence. One older girl added that having sex was a way to "rebel" against her parents who said, "don't do it." Nearly all perceived HIV to be a problem for teenagers due to drug use and experimentation, as well as frequent and unprotected sex. Yet 37% stated they felt it would never happen to them. Some (25%) believed they could avoid acquiring HIV by having sex with healthy looking people. One girl discussed her perception of what an individual with AIDS would look like, and then told of a recent experience where she was quite astonished to meet an infected adult who appeared "normal." Several inquired about transmission via saliva, a few others about mosquitoes and toilet seats. Misconceptions were few but present, 9% believed HIV was a "gay" or "druggie" disease. One young boy believed the AIDS epidemic could be resolved with all males having vasectomies. Another stated he planned to move to a place where there is no HIV, "like Africa."

Discussion and Conclusion

The findings in this study revealed that many adolescents are engaging in sexual activity at young ages, are frequently engaging in these behaviors without protection, and have inaccurate perceptions of their risk for contracting HIV. Nearly half reported sexual activity by age 13. Other investigators found that youth reporting high-risk behavior often

perceive themselves to be at lower risk than they actually are (Maticka-Tyndale, 1991; Overby & Kegeles, 1994), with postulations of optimistic bias or defensive denial (Gladis, Michela, Walter, & Vaugh, 1992), or unique invulnerability (Burger & Burns, 1988). Adolescents' perceptions of risk appeared to be unrelated to their sexual practices, such as condom use, sexual assertiveness, and self-efficacy, or their knowledge of HIV. Knowledge regarding HIV and transmission was high, although some misconceptions prevailed. Sexually experienced teens reported high levels of sexual assertiveness for condom use and partner communication, as well as high levels of self-efficacy for condom use with minimal situational constraints. Yet only 8% of the sexually active youth reported consistent condom use during the previous year.

Inconsistencies with self-reported sexual behavior and risk perception were found. Only about one-third of the sexually active youth considered themselves to be at no risk for HIV; however, nearly all of these teens reported engaging in unprotected sexual activity during the previous year. One partial explanation for such discrepancies may be related to social desirability regarding general inquiries for risk perception, without regard to specific behaviors that were reported at the end of the questionnaire. Similar inconsistencies were reported in a previous study, where youth "explained" discrepancies with responses such as "except for me..." or an unwillingness to address inconsistencies, "I just don't want to think about that..." (Maticka-Tyndale, 1991). These findings were noted with focus group discussions where more than one-third believed "it could never happen to them," and one-quarter believed they could assess whether someone was infected by physical appearance. It may be that the idea of asymptomatic carriers of a deadly disease is difficult for adolescents to accept. Further, for youth in this study, perception of "risk" did not underscore health, and seemed to be largely focused on "getting caught" and only secondarily revealed concern for pregnancy.

Logistic regression results did reveal that a higher number of sex partners and younger age of sexual debut was related to perceived risk for HIV for sexually experienced girls. Focus group discussions associated sexual activity with popularity with younger participants, where the belief that having sex with a popular person would promote popularity was prominent. However, as youth entered senior high school, the popularity-by-association belief seemed to be replaced with fear of gaining a promiscuous reputation. Thus, the association with number of sex partners and younger age of sexual debut does indicate that girls may be assessing their risk based on behavior in a fairly accurate manner.

Although self-reported substance use was high, particularly for alcohol and to a lesser extent marijuana, using alcohol was significantly related to girls' perceptions of their own risk for HIV, but not for boys where use was more prominent. The association between drug use and perceived risk for HIV may involve a more complex relationship, such that drug use may influence sexual behavior, and that protective measures are less likely to occur during sexual encounters while under the influence of alcohol or other drugs (e.g., Clapper & Lipsitt, 1991; Lowry, et al., 1994). Again, this may provide further evidence that sexually experienced girls may be taking their behaviors into account when assessing their personal risk for HIV.

Logistic regression also found that sexually experienced girls who have higher sexual assertiveness for partner communication are more likely to perceive themselves at some

level of risk for HIV than girls with lower levels of partner communication sexual assertiveness. This finding appears contradictory to what one might expect. One explanation may be found in the focus group discussions. Several girls stated that they would ask a partner about their sex histories but believe "men lie," thus communication "is pointless." Others admitted that they "don't think" when in the situation. This finding may touch upon a potential lack of control – whether external with a partner characteristics, or internal with inner struggles – that young girls might experience in sexual situations.

The association of peer risk to personal perceived risk for boys may be related to perceptions of social norms regarding risk (Adler, Kegeles, Irwin, & Wibblesman, 1990), the influential role peers adopt during adolescence (Berndt & Ladd, 1989), and/or group peer pressures regarding substance use and sexual behavior (Brown, Clasen, & Eicher, 1986; Dielman, Campenelli, Shope, & Butchart, 1987). Further, what an adolescent may believe his or her peer group considers risky sexual behavior, influences whether he or she labels the behavior risky (Catania, Kegeles, & Coates, 1990). There is a considerable literature that identifies the peer group as a major influence for initiating and maintaining a number of high-risk behaviors in adolescents that are associated with HIV infection such as drug and alcohol use and unprotected sexual behavior (e.g., Block, Block & Keys, 1988; Fisher & Bauman, 1988). Research has also demonstrated that high-risk sexual behaviors are significantly more likely to occur among adolescents who have peers who engage in problem behavior (e.g., aggressive and delinquent acts) as well as friends who use alcohol (Biglan, et al., 1990).

The examination of predictors of sexual assertiveness rendered weak models for both genders. Although sexually experienced boys reported significantly higher levels of sexual assertiveness for condom use and partner communication than girls, analyses of sexual behaviors revealed that neither gender are using these self-reported skills to protect themselves from HIV infection. Social desirability may be a factor in these contradictory findings, however from focus group discussions, it appears as though invulnerability is commonplace.

Accurate appraisal of individual risk that is associated with behavior is an essential component for behavior change. Adolescents are not likely to change their risk-related behaviors unless they perceive themselves to be at risk for infection. Findings in this study suggest that misperceptions regarding personal risk among adolescents are common, and that risk assessment often excludes assessment of personal behavior. Future investigations and intervention efforts may benefit from developing methods for assisting adolescents with accurate risk appraisal and specific strategies for risk reduction. Denial of threat or perceptions of invulnerability may interfere with accurate risk assessment, and may lead to distress or fear that could require enhancing coping strategies. Adolescents can be encouraged to examine their own sexual and drug use behaviors, be assisted with coping strategies to alleviate potential fear and distress, and be presented with guidelines that help them understand the consequences of their behavior. Prevention efforts can include provision for practical and specific strategies for risk reduction, such as consistent condom use, or participating in safe sex activities such as kissing, hugging and touching. Additionally, provision of accurate information can facilitate youth with assessing personal risk. In this study, focus group information revealed youth desire such information, and that it was often

not received in a timely fashion from formal educational settings and typically promoted only abstinence.

Limitations of the Study

Although the findings in this study coincide with previous research, the findings are cautioned due to some limitations that hinder generalizability. First, the majority of the sample was comprised of Caucasian adolescents and may not be representative of non-Caucasian populations. Also, the study is subjected to participation bias, where 75% of the total sample did not return the questionnaire and data were unavailable. Second, measurement error and attribution bias pose limitation especially among adolescents with items relating to substance use (McAllister & Makkai, 1991) and sexual behaviors (Catania, Gibson, Chitwood, & Coates, 1990). Self-report measures utilized in this research endeavor contain inquiries about highly personal behaviors that are subjected to both under-reporting particularly with substance abuse and over-reporting possibly with sexual behaviors. However, feedback acquired from survey and focus group participants indicate that most were truthful with their responses with sensitive items given the anonymity of the questionnaire. Other investigators report that assurance of anonymity increases reporting of sensitive information (Murray & Perry, 1987). Nonetheless, it should be noted that although the questionnaire was designed to be anonymous to maximize accurate self-disclosure, self-report inconsistencies were found particularly with items pertaining to condom use and sexual behaviors that pose questions regarding validity. Last, retrospective measures in this study are susceptible to memory errors. However, adolescents are typically able to provide reliable estimates for retrospective periods of 2 months, and teens, relative to most adults, are likely to have less sexual experience and fewer sexual encounters in a given period of time, and are therefore more likely to be able to recall events with greater accuracy (Catania, Gibson, Chitwood, & Coates, 1990; Catania, Gibson, Marin, Coates, & Greenblatt, 1990).

Conclusion

Adolescents are engaging in sexual activity at young ages, are frequently engaging in these behaviors without protection, and typically have inaccurate perceptions of their risk for contracting HIV, underscoring the need for intensive interventions targeting youth. More research is needed in determining how adolescents gauge their risk for HIV, and what factors contribute to the adoption of protective measures.

References

Adler, N.E., Kegeles, S.M., Irwin, C.E. Jr., & Wibblesman, C. (1990). Adolescent contraceptive behavior: An assessment of decision process. Journal of Pediatrics, 116, 463-471.

Berndt, T.L., & Ladd, G.W. (1989). Peer relationships in child development. New York: Wiley.

Big A., Metzler, C.W., Wirt, R., Ary, D., Noell, J., Ochs, L., French, C., & Hood, D. (1990). Social and behavioral factors associated with high-risk sexual behavior among adolescents. Journal of Behavioral Medicine, 13, 245- 261.

Block, J., Block, J.H., & Keys, S. (1988). Longitudinally foretelling drug usage in adolescence: Early childhood personality and environmental precursors. Child Development, 59, 336-355.

Brown, B.B., Clasen, D.R., & Eicher, S.A. (1986). Perceptions of peer pressure, peer conformity, dispositions, and self-reported behavior among adolescents. Developmental Psychology, 22, 521-530.

Burger, J.M., & Burns, L. (1988). The illusion of unique invulnerability and use of effective contraception. Personality and Social Psychology Bulletin, 14, 264-270.

Burkholder, G.J. (1994). Education, attitudes toward gay and lesbian persons, anxiety, and HIV/AIDS risk. Unpublished masters thesis, University of Rhode Island, Kingston.

Burkholder, G.J., Harlow, L.L., & Washkwich, J.L. (1999). Social stigma, HIV/AIDS knowledge, and sexual risk. Journal of Applied Biobehavioral Research, 4(1), 27-44.

Catania, J.A., Coates, T.J., Kegeles, S.M., Ekstrand, M., Guydish, J.R., & Bye, L.L. (1989). Implications of the AIDS Risk-Reduction Model for the gay community: The importance of perceived enjoyment and help-seeking behaviors. In V.M. Mays, G.W. Albee, & S.F. Schneider (Eds.), Preliminary Prevention of AIDS: Psychological Approaches (pp. 242-261). Newbury Park, CA: Sage Publications.

Catania, J.A., Gibson, D.R., Chitwood, D.D., & Coates, T.J. (1990). Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. Psychological Bulletin, 108, 339-362.

Catania, J.A., Gibson, D.R., Marin, B., Coates, T.J. & Greenblatt, R.M. (1990). Response bias in assessing sexual behaviors relevant to HIV transmission. Evaluation and Program Planning, 13, 19-29.

Catania, J.A., Kegeles, S.M. & Coates, T.J. (1990). Toward an understanding of risk behavior: The AIDS Risk Reduction Model (ARRM). Health Education Quarterly, 17, 53-72.

Centers for Disease Control and Prevention (1998). Trends in sexual risk behaviors among high school students – United States, 1991-1997. Morbidity and Mortality Weekly Report, 47(36), 749-752.

Centers for Disease Control and Prevention (2000). Young people at risk: HIV/AIDS among America's youth. Fact Sheet, National Center for HIV, STD and TB Prevention, Division of HIV/AIDS Prevention. [On-line]. Available: http://www.cdc.gov/hiv/pubs/facts/youth.pdf

Clapper, R.L., & Lipsitt, L.P. (1991). A retrospective study of risk-taking and alcohol-mediated unprotected intercourse. Journal of Substance Abuse, 3, 91-96.

DiClemente, R.J., Boyer, C.J., & Morales, E.S. (1988). Minorities and AIDS: Knowledge, attitudes, and misconceptions among Black and Latino adolescents. American Journal of Public Health, 78, 55-57.

DiClemente, R.J., Zorn, J., & Temoshok, L. (1986). Adolescents and AIDS: A survey of knowledge, attitudes and beliefs about AIDS in San Francisco. American Journal of Public Health, 76, 1443-1445.

Dielman, T.E., Campenelli, M.A., Shope, J.T., & Butchart, A.T. (1987). Susceptibility to peer pressure, self-esteem and locus of control as correlates of adolescent substance abuse. Health Education Quarterly, 14, 207-221.

Fisher, L.A., & Bauman, K.E., (1988). Influence and selection in the friend-adolescent relationship: Findings from studies of adolescent smoking and drinking. Journal of Applied Social Psychology, 18, 289-314.

Gladis, M.M., Michela, J.L., Walter, H.J., & Vaughan, R.D. (1992). High school students' perceptions of AIDS risk: Realistic appraisal or motivated denial? Health Psychology, 11, 307-316.

Gruber, E., & Chambers, C.V. (1987). Cognitive development and adolescent contraception: Integrating theory and practice. Adolescence, 22, 211-219.

Hosmer, D.W., & Lemeshow, S. (1989). Applied logistic regression. NY: John Wiley & Sons.

Irwin, C.E. & Millstein, S.G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence. Journal of Adolescent Health Care 7, 582-596.

Maticka-Tyndale, E. (1991). Sexual scripts and AIDS prevention: Variations in adherence to safer-sex guidelines by heterosexual adolescents. Journal of Sex Research, 28, 45-66.

McAllister I., & Makkai T. (1991). Correcting for the underreporting of drug use in opinion surveys. The International Journal of the Addictions, 26(9), 945-961.

Miller, W.R., Tonigan, J.S., & Longabaugh, R. (1995). The Drinker Inventory of Consequences (DrInC): An instrument for assessing adverse consequences of alcohol abuse. U.S. Department of Health and Human Services, National Institute on Alcohol Abuse and Alcoholism; Project MATCH Monograph Series. Vol. 4. NIH Pub. No. 95-3911. Washington, DC: U.S. Government Printing Office.

Morokoff, P.J., Quina, K., Harlow, L.L., Whitmire, L.E., Grimley, D.M., Gibson, P., & Burkholder G.J. (1997). Sexual Assertiveness Scale (SAS) for women: Development and validation. Journal of Personality and Social Psychology, 73, 790-804.

Murray, D.M. & Perry, C.L. (1987. The measurement of substance use among adolescents: When in the "bogus pipeline" method needed? Addictive Behaviors, 12, 225-233.

Overby, K.J., & Kegeles, S.M. (1994). The impact of AIDS on an urban population of high-risk female minority adolescents: Implications for intervention. Journal of Adolescent Health, 15, 216-227.

Prochaska, J.O., Harlow, L.L., & The Behavior Change Institute (1990). Models of behavior change for condom use: Preliminary analyses in an AIDS-risking community sample. Technical Report (Contract #0-4115-002), Atlanta, GA: Centers for Disease Control.

Quina, K., Harlow, L.L., Gibson, P., & Morokoff, P. (1990, August). Psychometric investigation of a sexual assertiveness scale. Paper presented at the annual meeting of the American Psychological Association, Boston, MA.

Quina, K., Rose, J.S., Harlow, L.L., Morokoff, P.J., Deiter, P.M., Whitmire, L.E., Lang, M.A., & Schnoll, R.A. (1999). Focusing on participants: Feminist process model for survey modification. Psychology of Women Quarterly, 23, 459-483.

Siegel, D., Larazus, N., Krashovsky, F., Durbin, M., & Chesney, M. (1991). AIDS knowledge, attitudes, and behavior among inner city, junior high school students. Journal of School Health, 61, 160-165.

SPSS, Inc. (1999). SPSS® Statistical Package for the Social Sciences Version 9.0.1 for Windows, Chicago: SPSS, Inc.

Table 1.

Gender Differentials Among Sexually Experienced Adolescents on Demographics and Potential Risk Predictors

Variable	Young Women (N = 142) Mean	SD	%	Young Men (N= 126) Mean	SD	%	Gender Effects [a]
Age	15.8	1.4	--	15.4	1.3	--	n/s
Percent Caucasian	--	--	82%	--	--	66%	*
Number of Sex Partners in Past Year	1.8	1.5	--	2.7	2.4	--	*
Number of Sex Partners in Lifetime	2.8	2.3	--	4.2	3.0	--	*
Estimated Peer Risk for HIV [b]	2.6	0.7	--	2.8	0.6	--	n/s
AIDS Misconceptions [b]	2.2	1.1	--	2.6	1.1	--	n/s
Efficacy for Condom Use [b]	3.6	1.2	--	3.4	1.1	--	n/s
Sexual Assertiveness for Condom Use [b]	3.2	1.1	--	3.7	1.0	--	*
Sexual Assertiveness for Partner Communication [b]	3.1	1.2	--	4.0	1.0	--	*
Drank Alcohol in Past Year	--	--	76%	--	--	92%	*
Use Marijuana in Past Year	--	--	24%	--	--	37%	n/s
Used Other (non-prescribed) Drugs in Past Year	--	--	11%	--	--	20%	n/s
Number of Alcohol/Drug Consequences in Past Year	9.8	13.3	--	16.9	15.7	--	*
Number of Sexual Behaviors in Past Year [c]	50.8	82.4	--	51.1	98.2	--	n/s
Proportion of Sexual Behaviors Unprotected	--	--	69%	--	--	82%	*
Age First Had Sexual Intercourse (willingly)	14.3	1.6	--	12.8	1.8	--	*
Length of Current Relationship [d]	2.8	1.2	--	3.4	1.0	--	*

[a] Significant general linear model MANOVA ($F(17, 250) = 9.60$, $p<.001$ ($\eta^2 = .40$)), post hoc multiple comparisons with gender effects are corrected with the Bonferroni test.
[b] Five Point Likert Scale 1=low to 5=high.
[c] Includes vaginal, oral and anal sex.
[d] Coding: 0=no relationship; 1 = < one month; 2 = 1 to 6 months; 3 = 7 to12 months; 4 = over one year.
* $p < .05$ or less with Bonferroni correction.

Table 2.

Summary of Logistic Regression Results for Sexually Experienced Adolescents' Self-rated Risk for HIV: Predicting Some Level of HIV Risk

Variable	β	SE	Wald χ^2	OR	95% CI (Odds)	Standardized β
Profile for Young Women						
Number of Sex Partners in Past Year	0.45	0.20	5.27 *	1.57	1.07 – 2.30	0.53
Sexual Assertiveness for Partner Communication	0.38	0.19	4.13 *	1.47	1.01 – 2.12	0.36
Used Alcohol in Past Year	1.57	0.46	11.42 ***	4.78	1.93 – 11.85	0.55
Age First Had Sexual Intercourse (willingly)	-0.43	0.15	8.58 **	0.65	0.49 – 0.87	-0.57
Constant	3.70	1.90	3.78			
Profile for Young Men						
Peer Risk	0.69	0.32	4.85 *	2.00	1.08 – 3.70	--
Constant	-1.11	0.86	1.65			

Note. SE = standard error; OR = odds ratio; CI = confidence interval.
*p < .05; **p < .01; ***p < .001.

Table 3.

Summary of Logistic Regression Results for Sexually Experienced Adolescents' Self-reported Sexual Assertiveness: Predicting High Assertiveness

Variable	β	SE	Wald χ^2	OR	95% CI (Odds)	Standardized β
Profile for Young Women						
Efficacy for Condom Use	0.84	0.23	12.88 ***	2.31	1.46 – 3.64	0.62
AIDS Misconceptions	-0.60	0.24	6.60 **	0.55	0.35 – 0.87	-0.40
Age First Had Sexual Intercourse (willingly)	0.39	0.15	6.60 **	1.48	1.10 – 2.00	0.39
Constant	-8.65	2.30	14.21			
Profile for Young Men						
Efficacy for Condom Use	0.62	0.18	11.71 ***	1.86	1.30 – 2.66	---
Constant	-2.06	0.65	10.08			

Note. SE = standard error; OR = odds ratio; CI = confidence interval.
*p < .05; **p < .01; ***p < .001.